One grain at a time: Assam’s rice seed library for climate resilience

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These traditional varieties have traits that can protect the farmers and people of Assam from the impact of climate change on food security.

Assam has high vulnerability to climate change, so these seeds are of high significance.

In the foothills of the eastern Himalayas in Assam, Mahan Chandra Borah, is racing against time to stock up nearly-extinct and rare indigenous rice varieties, one grain at a time, in his unique seed library-to help secure genetic diversity for climate resilience. Borah’s ‘Annapurna’ library is “northeast India’s first indigenous seed saving library” that seeks to collect and promote the cultivation of heirloom rice landraces of the region in the wake of climate change. A history graduate-turned-farmer, he started the seed bank about 12 years ago, from Meleng in Assam. Backed by traditional wisdom on diverse rice cultivars imparted by the elderly in his village, he fanned out to hamlets across the northeastern states in hunt of these treasures. He subsequently converted it into a library. His assemblage includes aromatic, sticky, black, flood-tolerant and hill rice among others. “I started with three varieties. Now I have 250 varieties of rice, mostly from northeast India,” Borah said. “These traditional rice types can withstand extreme climatic variability such as floods, drought etc. But they are not cultivated extensively nowadays due to preference for hybrid or high yielding varieties (HYVs).” Annapurna Seed Library’s display at Kaziranga National Park. Photo by Bijit Dutta / Annapurna Seed Library. A seed chain Annapurna is also a sister library of the California-based Richmond Grows Seed Lending Library.

Seed security for food security According to Assam’s Action Plan on Climate Change (SAPCC 2015-2020)the state falls within areas of greatest climate sensitivity, maximum vulnerability and lowest adaptive capacity. The draft report has flagged rise in ambient temperature, reduction in availability of water for irrigation, degrading soil health, erratic floods and droughts, emergence of new pests and pathogens as ‘threats’ to rice production levels. The emerging trends of rainfall indicate a reduction in the number of rainy days but a spike in extreme rainfall days coupled with enhanced intensity. Total rainfall is projected to increase in most of the areas in the Assam in the future. “Nearly 0.4 million hectares of paddy is chronically flood prone and in some years, the flood swallows up about 1 million hectares,” Ahmed said. In addition, the hot humid climate of Assam favours pests and diseases. The pest scenario is further aggravated by intensive cultivation of susceptible modern HYVs, overlapping growing seasons, use of high doses of chemical fertilisers and injudicious use of plant protection chemicals. “Wild rice types are disappearing very fast and collection of wild rice deserves priority. Biotechnological tools will be helpful in conserving rice varieties. Also, variability of germplasm up to DNA level should be documented with regards to IPR regime,” Ahmed said. Paddy fields along the Brahmaputra in Assam. Photo by P.P. Yoonus / Wikimedia Commons. “Northeast is the motherland of paddy. My ancestors were into farming and I took up the profession. Gradually it was seen that some of the traditional varieties started vanishing. This is not good. In addition, the seed market is being monopolised. So if you think about food security, you must think about seed security,” Borah signed-off. First published by Mongabay Read another piece on this seed library.